BELDEN
SENDING ALL THE RIGHT SIGNALS

New Product Bulletin
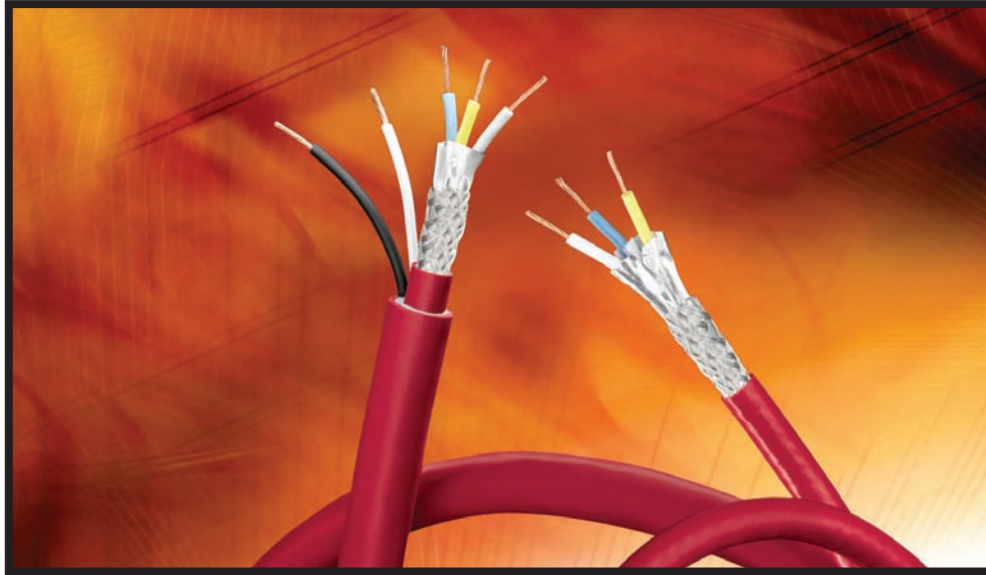
Belden® IndustrialTuff® CC-Link Cables

IndustrialTuff data (3-conductor) and data with power (5-conductor) cables are certified for CC-Link systems. They perform to maximum system requirements.

Belden Now Offers DataBus® and DeviceBus® Cables That Meet the Mitsubishi CC-Link Specification

About CC-Link

CC-Link is an open, field-level network protocol that provides for the high speed communication linking of a wide range of automation devices over a single cable. CC-Link is already an established technology in Asia and is experiencing fast growth in both North America and Europe. A number of global standards organizations also recognize CC-Link technology, including the Semiconductor Equipment Manufacturers Institute which has identified CC-Link as an international standard for sensor/actuator networks (SEMI E54.12).

CC-Link technology is based on the use of an Application Specific Integrated Circuit (ASIC) available from Mitsubishi Electric Automation. This ASIC handles the complete data link and transport layers, thus assuring interoperability between devices.

CC-Link technology utilizes a master/slave architecture; the maximum number of slave stations is 64. A typical scan rate for 64 stations at 10 Mbps is 4 ms (Version 1.10) or 4-16 ms (Version 2.0). The maximum number of I/O points is 2,048 (Version 1.10) or 8,192 (Version 2.0). The system offers five speed options based on the length of wired network cable required (*see table*).

CC-Link Specifications – 1.10 or 2.0 Systems

Communication Speed	Max. Cable Length Without Optical Repeater	Max. Cable Length With Optical Repeater
10 Mbps	100 M	4.3 km
5 Mbps	160 M	4.48 km
2.5 Mbps	400 M	5.2 km
625 Kbps	900 M	6.7 km
156 Kbps	1200 M	7.6 km

CC-Link Cable Construction

Belden CC-Link cables are engineered specifically to meet the Mitsubishi CC-Link testing requirements. Belden Part No.1348A (Mitsubishi Part No. BA1SJ61-5) is a 3-conductor data cable with 20 AWG stranded (7x28) bare copper conductors. Belden Part No.1349A (Mitsubishi Part No. BA1SJ61-P) is a 5-conductor data and power cable with three 20 AWG stranded (7x28) bare copper conductors and two 18 AWG stranded (7x26) bare copper conductors. Both cables feature foam HDPE insulations, overall Beldfoil and 78% tinned copper braid shields, 22 AWG (19x34) tinned copper drain wires and red PVC jackets.

These 300V, 110 ohm cables are available from stock in 1,000 ft. lengths.

Industrial Data Solutions® — Interconnect Cable
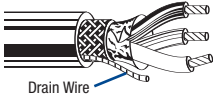### CC-Link Certified Data Cable – Mitsubishi DataBus®

CC-Link

Description	Part No.	UL NEC/ C(UL) CEC Type	Standard Lengths		Standard Unit Weight		Conductor (stranding) Diameter Nom. DCR	Shielding Materials Nom. DCR	Color Code	Nominal OD		Nom. Imp Ω	Nom. Vel. of Prop.	Nominal† Capacitance		Max. Attenuation		
			Ft.	m	Lbs	kg.				Inch	mm			pF/Ft.	pF/m	MHz	dB/ 100ft.	dB/ 100m

Three Conductor (3) 20 AWG Stranded (7x28) BC Conductors • Overall Beldfoil® Shield (100% coverage) + TC Braid Shield (78% Coverage) • Drain Wire*

Foam HDPE Insulation • Red PVC Jacket

Description	Part No.	UL NEC/ C(UL) CEC Type	Ft.	m	Lbs	kg.	Conductor	Shielding	Color Code	Inch	mm	Imp	Prop	pF/Ft.	pF/m	MHz	dB/100ft.	dB/100m
300 V RMS	1348A	NEC: CM CEC: CM	1000	304.8	53	24.0	(3) 20 AWG BC (7 x 28) 9.5Ω/M' 31.2 Ω/km	Beldfoil Shield 100% +TC Braid (78%) 8.0Ω/M' 26.3 Ω/km	Blue Yellow, White	.303	7.70	110	75%	18.3	60.0	1 5	.49 1.07	1.6 3.5

Drain Wire

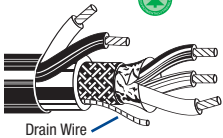*22 AWG Stranded (19 x 34) tinned copper drain wire

CC-Link Certified Data and Power Cable – Mitsubishi DeviceBus®

Description	Part No.	UL NEC/ C(UL) CEC Type	Standard Lengths		Standard Unit Weight		Conductor (stranding) Diameter Nom. DCR	Shielding Materials Nom. DCR	Color Code	Nominal OD		Nom. Imp Ω	Nom. Vel. of Prop.	Nominal† Capacitance		Max. Attenuation		
			Ft.	m	Lbs	kg.				Inch	mm			pF/Ft.	pF/m	MHz	dB/ 100ft.	dB/ 100m

Five Conductor (3) 20 AWG Stranded (7x28) BC Conductors • Beldfoil® Shield (100% coverage) + TC Braid Shield (78% Coverage) • Drain Wire* • (2) 18 AWG Stranded (7 x 26) BC Conductors

Foam HDPE Insulation • Inner Jacket PVC • Red PVC Outer Jacket

Description	Part No.	UL NEC/ C(UL) CEC Type	Ft.	m	Lbs	kg.	Conductor	Shielding	Color Code	Inch	mm	Imp	Prop	pF/Ft.	pF/m	MHz	dB/100ft.	dB/100m
300 V RMS	1349A	NEC: CM CEC: CM	1000	304.8	126	57.1	(3) 20 AWG BC (7 x 28) 9.5Ω/M' 31.2Ω/km (2) 18 AWG BC (7 x 26) 5.8Ω/M' 19.0Ω/km	Beldfoil Shield 100% +TC Braid (78%) 8.0Ω/M' 26.3Ω/km	Data: Blue, Yellow White Power: Black, White	.512	13.00	110	75%	18.3	60.0	1 5	.49 1.07	1.6 3.5

Drain Wire

*22 AWG Stranded (19 x 34) tinned copper drain wire

BC = Bare Copper • DCR = DC Resistance • HDPE = High-density Polythylene • TC = Tinned Copper
† Capacitance between one conductor and other conductors connected to shield